DYNO mite™ Chassis Dynamometer Systems – Auto

FWD/RWD or AWD (to 1,500+ Hp*) chassis kits include: 8½", 13", or 20" medium-inertia dual-roller assembly, removable roller shield, drive-up ramps, wheel chocks, casters, water or eddy-current absorber with step-up drive, electronic torque transducer, DYNOmite data-acquisition computer, AC power supply, electronic auto-load control, DYNO-MAX software, inductive RPM pickup, required hoses, engine-temperature thermistor, and full-function data harness.

Our chassis dynamometer assembly-line area, just before pre-shipping testing. We also accommodate production and servicing of private-label brands – with the capability to take your product line from raw material to decal application.

One of Land & Sea’s own AWD bays uses adjustable I-beams, supporting over-sized pit plates, to accommodate our testing of numerous configurations of production chassis dynamometers.

High-end Pro chassis systems (to 4,000+ Hp*) include: a FWD/RWD (optional AWD upgrade shown below) tube-steel frame with 24", 30", 44", or 60"-diameter medium-inertia rolls, bolt-on diamond-tread deck plating, floor anchors, wheel chocks, vehicle tie downs, water or eddy-current absorber(s) with step-up drive, electronic torque transducer, DYNOmite 28-channel data-acquisition computer, inductive RPM pickup, DYNO-MAX “Pro” software, printer, Windows-7®-equipped Dell™ laptop, mobile computer stand, electronic auto-load control, weather station, AFR module, 42" high-volume cooling fan, hoses, engine-temperature thermistor, and full-function data harness.

DYNO-MAX™ “Pro” Software creates a full vehicle dashboard on your PC or laptop. Features include: real-time trace graph display, adjustable-limit alarm warnings, pushbutton controls, user configurable analog and digital gauge ranges, color graphing, test-report database, instant playback, full inertia compensation, Smart Record™ trigger points, adjustable data dampening, multiple data import/export options, semi-automatic zeroing, voice alarms on all gauges, wireless remote Pocket DYNO-MAX™ control interface, drag strip Christmas-tree console, etc.

DYNOmite data-acquisition computer displays and records true unlimited Hp, torque, RPM, elapsed time, etc. at up to 1,000 readings per second (per channel). It will even automatically apply SAE correction factors for air temperature, barometric pressure, and relative humidity.
More than acceleration Hp can be measured with DYNOmite absorption units, because they utilize an actual strain-gauge-equipped torque transducer. Measuring power under a controlled RPM load is vital for the proper mapping of engine management systems and guess-free emissions work. Avoid “dynos” that simply spin the vehicle’s tires up against their roll’s inertia (flywheel resistance) without having any ability to simultaneously control and measure absorption load. Rather than measuring the torque, they derive it from the acceleration (similar to extracting horsepower from drag-strip data). Such units cannot maintain a MPH or RPM setting, while also displaying true torque and Hp – like a DYNOmite can!

Sustained Hp and top end require an absorption dynamometer (i.e. a DYNOmite system). Unlike “acceleration spurt” inertial testing, these can load a vehicle indefinitely.* The absorber allows running controlled RPM step or sweep Hp tests. Everything is under computer control via the included Electronic Auto Load.

Simulate driving conditions on your chassis dyno by letting DYNO-MAX and your PC take control. DYNO-MAX features a “Road Load Simulation” mode that simulates vehicle momentum, air drag, rolling friction, etc. Enter the vehicle’s weight and drag data and then allow the software to monitor MPH vs. applied Hp, as it adjusts the dynamometer’s road load accordingly. To the vehicle’s driveline and operator, the feel is like actually driving down the road.

Front, rear, and all wheel drive cars or trucks can be tested on the appropriate model DYNOmite automotive chassis dyno. Many will allow front versus rear torque bias monitoring and bidirectional mounting. Even large bikes and ATVs can be fit onto our tandem-roller dynamometer assemblies. Add AWD, with Electronic Axle Synchronization, to (any brand) single-axle chassis dynamometer. We can convert most – at a fraction of the cost of a new dyno!

Machined-in “traction grooves” provide more traction (but less heat buildup) than cosmetic diamond-knurled rolls – without requiring excessive (Hp-robbing) strap-down force.
Super-duty dynamometer frame assembly – mating this 30” “traction grooved” high-inertia roller, together with Land & Sea’s large-diameter direct-drive eddy absorber.

Dynamically balanced and machine traction-grooved rollers dramatically limit vibration and tire slip! Test most production vehicles (up to 150 MPH and 700 Hp) on our smallest automotive dual-roller assembly. Larger diameter roll systems easily handle sustained higher speed testing at racecar power levels. (*Capacities are approximate, as they are primarily tire safety and traction limited – higher torque requires tie downs.)

Fix driveline problems that might never show up in the garage, like shifting issues, driveshift vibration, brake squeal, bearing noises, brake shudder, exhaust rattles, etc. – without costly field testing.

Verify emissions under load with your existing, or our (optional) digitally integrated five-gas DYNOmite Exhaust Measurement System. Emission testing requires repeatable loading, on an absorption dyno. Forget using unloaded idle data to verify if repairs are in compliance. Send customers for state inspections with confidence.

Our “multi-roll” mechanically-linked AWD dynamometer option allows hassle-free testing of FWD or RWD traction-controlled vehicles, as well as 4WD and AWD applications.

Low profile, ramp loading allows installing our 8-1/2” through 20” roller units above ground – or in a driveway. Casters (on some models) let you roll it to a corner when not in use (just raise their anti-vibration leveling pads). No dedicated test bay, or digging up floors, required.

Rapid on-off set-up makes it practical to skip those old time-consuming road trips. Just drive it on, strap it down, hook up the tach (or use Smart Ratio™) and test – a full report prints out automatically.

20-inch roll system is available with eddy-current absorber and/or AC motoring options. Installs in a pit or above ground – with optional four-post lift (as shown) or ramps.